UK childbirth delivery options in 2001–2002:
alternatives to consultant unit booking and delivery

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ABSTRACT

Background
Government policy advocates maternal choice in pregnancy care. Two key issues are place of birth and type of lead professional. Anecdotal evidence suggests there is variation in both these issues across the UK, but there has been no recent national assessment of whether maternal options are in line with government policy.

Aim
To establish the range of women's childbirth delivery options, degree of midwife autonomy, and supporting training and governance mechanisms.

Design
Two postal questionnaires.

Setting
UK maternity units.

Method
Questionnaires were sent to maternity services managers. Main outcome measures: number and type of units and births, transfers and care types; midwifery procedures; clinical governance and training activities.

Results
Completed questionnaires were received from 301 out of 308 (97.7%) units in 2002 and from 258 out of 309 (83.5%) units in 2001. Midwife-led care is available in 186 English (76.9%), 15 Welsh (78.9%), 18 Scottish (48.6%) and three Northern Ireland (30.0%) units. There are 73 (24.3%) stand-alone, 22 (7.3%) alongside, 127 (42.2%) integrated and 79 (26.2%) consultant units (for definitions of unit types, see main text), with a median 2215 hospital, 25 home and 210 midwife-led births. The median antenatal and labour transfers from midwife-led units are 25.5% (interquartile range [IQR] = 18.5–36.5%) and 18.0% (IQR = 13.4–24.8%) respectively; transfers are independent of distance to nearest consultant unit, country and unit type.

Conclusions
Despite government policy promoting greater parental choice, this is not in evidence in many parts of the UK. The wide variations in home birth, midwife-led care and maternity-unit types merit further exploration. If more midwife-led units are to be established as a way of promoting parental choice and dealing with junior doctor rota problems, then such units must have adequate governance and training activities in place.

Keywords
care options; childbirth; delivery; midwifery.

INTRODUCTION

Over 10 years ago, government policy on maternity care had a major overhaul with the publication of the *Changing Childbirth* report.[1] The National Service Framework (NSF) for children, young people and maternity services has made recommendations to update this policy.[2] Maternal choice is central to both of these policies, of which two key aspects are place of birth and the pregnant woman's lead professional. At the time of the last national survey of maternity units,[3] about 93% of women gave birth in consultant units under the nominal care of a consultant, 6% gave birth in GP units under the nominal care of a GP, and roughly 1% gave birth at home, under the nominal care of a midwife. There has been a trend for GP units, as they were formerly known, to be changed into freestanding birth centres or midwifery units. Others have closed down and there is ongoing pressure to close more.[4] Due to the European Working Time Directive, it is likely that small consultant units will have to change — and some may become midwife-led units. The recent government working party that looked at the issue of manpower in relation to maternity units[5] made a range of options available to the government, but no policy decision has yet been made as to the future of both consultant-led and stand-alone small maternity units. This national survey was undertaken to establish the range of options available, prior to the publication of the NSF for children, young people and maternity services, in terms of place of birth and types of care.

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METHOD

In 2001 and 2002 postal questionnaires were sent in to the maternity services managers of all UK maternity units, including covering letters and freepost envelopes for return. The list of recipients was generated from an amalgamation of the Royal College of Obstetricians and Gynaecologists maternity hospital database, the Association of Community Hospitals handbook, and the database held by the author from the previous survey in 1990.3 The original 1990 survey procedure was modified, reviewed and then finalised. A postal reminder was sent 2 months after each initial posting; non-responders were subsequently contacted by telephone. All returned questionnaires were entered onto an Excel database and analysed using SPSS.

The first questionnaire, sent in 2001, asked about type of unit, booking arrangements; number and type of delivery and transfers for the past 3 years; type of hospital and GP unit and/or midwife unit (if any); intrapartum activities undertaken by both GPs and/or midwives; education and training taking place in the unit; and audit and other governance-type meetings. Each unit was asked to define itself as 'stand-alone' (geographically separate from nearest consultant unit), 'alongside' (functionally separate with own ward and delivery area, either within a consultant unit or adjacent to it), 'integrated' (using common delivery area with consultant cases for all births), or as a 'consultant' unit (no cases booked for GP or midwife-led hospital delivery). The second, shorter questionnaire (sent in 2002) sought to clarify the type of maternity unit (response options in the first questionnaire had been inadequate to establish the true nature of some maternity units) and to obtain delivery numbers for a further complete year. Results on intrapartum activities, education and training, audit and governance will be reported elsewhere.

How this fits in

This national survey of maternity units was undertaken to establish the range of options prior to the publication of the National Service Framework for children, young people and maternity services, in terms of place of birth and types of care. It is important that women have choice in their place of delivery and their principal carers. Where midwife-led care is available, more women choose to give birth outside of hospital. Where midwife units exist, there is a clear choice for women about whether to deliver under consultant-led care in the central consultant unit or not.

The returned questionnaires were analysed by non-parametric methods using the Kruskal–Wallis test to compare groups, and using Spearman's rank correlation (ρ) or χ^2 test as appropriate. Significance was defined as $P<0.01$ to allow for the large number of comparisons. Results are given for the UK, and some also for England and Wales separately. This should allow some useful comparisons, as the *Changing Childbirth* report only applied to England and Wales, the NSF for children, young people and maternity services only applies to England and Wales, and the 1990 survey was also confined to England and Wales. Not all responders answered all questions; some units closed down and some re-opened between the two questionnaires.

RESULTS

Completed questionnaires were received from 301 out of 308 (97.7%) and from 258 out of 309 (83.5%) maternity units in the UK in 2002 and 2001 respectively. In 2002, there were 73 (24.3%) stand-alone units, 22 (7.3%) alongside units, 127 (42.2%) integrated units and 79 (26.2%) consultant units (Table 1) (seven non-responders). The number of units in England and Wales fell from 306 in 1988 to 261 in 2002, due to a reduction in both consultant and non–consultant units. GP input into non-

Table 1. Maternity units in the UK in 2002 and 1988,[3] classified by country, type of unit, and type of maternity care options available.

Maternity unit and care type	England	Wales	England and Wales		Scotland	Northern Ireland	Total
	Year 2002[a]	2002	1988[b]	2002[a]	2002[a]	2002	2002[a]
Stand alone							
Any type	56	4	65	60	13	0	73
Midwife-led care[c]	47	3	-	50	5	0	55
GPs attend[d]	1	0	65	1	1	0	2
Both[e]	8	1	-	9	7	0	16
Alongside							
Any type	18	0	29	18	3[f]	1[f]	22
Midwife-led care[c]	16	0	-	16	1	0	17
GPs attend[d]	0	0	29	0	0	0	0
Both	0	0	-	0	0	0	0
Integrated							
Any type	112	11	134	123	2	2	127
Midwife-led care[c]	102	11	-	113	2	2	117
GPs attend[d]	1	0	134	1	0	0	1
Both	9	0	-	9	0	0	9
Non-consultant unit	186	15	239	201	18	3	222
Consultant unit	53	4	67	57	15	7	79
Total	242	19	306	261	37	10	308

[a]Seven non-responders, unit type not known in 2002 survey; three English and four Scottish. [b]Data from reference 3: 1988 survey in England and Wales; of 20 non-responders 11 were GP units and nine consultant units.[c]Women can be booked for midwife-led care throughout pregnancy. [d]Units where GPs will attend women in labour either electively or if labour problems arise. [e]Units where both of these options are available.[f]Two alongside units in Scotland and one in Northern Ireland stated that they did not provide midwife-led care.

Table 2. Bookings, transfers and births for maternity units in 2002.[a]

	n	Median	IQR
Hospital deliveries			
n	298	2215	605–3145
Home deliveries			
n	294	25.5	9.75–56.25
(%)	293	(1.64)	(0.75–3.29)
Consultant deliveries			
n	131	2451	1641–3252
GP deliveries			
n	11	5	3–18
Midwife booked			
n	66	401.5	176–878
Midwife antenatal transfers			
n	52	62	25–191
(%)	49	(25.5)	(18.5–36.5)
Midwife labour transfers			
n	81	35	15–74
(%)	78	(18)	(13.4–24.8)
Midwife all transfers			
n	52	98.5	38.25–238
(%)	52	(45.5)	(38–58)
Midwife deliveries			
n	120	210.5	95–473
(%)	120	(100)	(19.6–100)
Alongside unit deliveries			
n	16	577.5	412.5–867
Alongside unit labour transfers			
n	10	126.5	69.5–211

[a]*Missing data could not be obtained from the maternity units. IQR = interquartile range.*

consultant units has fallen greatly in England and Wales from 239 (78.1%) units to 20 (7.7%); midwives have become the alternative to consultant booking in 197 units. Alternatives to consultant booking are offered in more English (*n* = 186, 76.9%) and Welsh (*n* = 15, 78.9%) units than in Scotland (*n* = 18, 48.6%) or Northern Ireland (*n* = 3, 30%).

The median distance from stand-alone units to their nearest consultant unit is 18.5 (interquartile range [IQR] = 12–25) miles; transfers take a median time of 30 (IQR = 20–40) minutes. Distances are further in Scotland (Kuskal–Wallis H = 17.9, 2 degrees of freedom [df], *P*<0.001; median = 52.5 [IQR = 30.5–107.5]) miles versus England = 17.5 (IQR = 12–22) and versus Wales = 12 (IQR = 10–16), and transfer times are longer (H = 22.9, 2 df, *P*<0.001; median = 67.5 [IQR = 48.5–130]) versus 25 (IQR = 20–30) and versus 25 (IQR = 20–27.5) minutes, respectively.

Hospital births

For 2002, 298 (3 unknown) UK units reported a median of 2215 (IQR = 605–3145) hospital births (Table 2) and 294 (7 unknown) reported a median of 25.5 (IQR = 9.75–56.25) home births. Hospitals in England reported the most total deliveries per unit (median = 2400, IQR = 1050–3235), followed by Northern Ireland (median = 1984, IQR = 1064–2563), Wales (median = 1449, IQR = 463–2578) and Scotland (median = 890, IQR = 57–2153) (H = 14.5; 3 df; *P* = 0.002). Stand-alone units had far fewer deliveries (109, IQR = 58–197) and alongside units had more (3915, IQR = 2685–5019) than both integrated (2736, IQR = 1958–3307) and consultant units (2265, IQR = 1528–3140) (H = 175; 3 df; *P*<0.001). The presence or absence of midwife-led care in units made no difference to total deliveries (2083, IQR = 194–3154 versus 2257, IQR = 1548–3149 respectively; H<1; *P* = not significant).

There were only 20 units where GPs book women for labour; in another eight units GPs did not book pregnant women but would attend if called by a midwife for assistance. The median number of GP hospital deliveries showed an overall decline from 1999 to 2002: 96 (90.5–309; 21 units), 106 (10.5–264; 25 units), 77 (5.25–141.25; 28 units) and 5 (3–18; 11 units) deliveries, respectively.

Midwife-led care

The median number of midwife-led deliveries per unit in the UK was 210.5 (IQR = 95–473). More in absolute numbers occurred in England (*n* = 524, IQR = 119–249) than Wales (*n* = 131, IQR = 30–209) or Scotland (*n* = 47, IQR = 20–83) (H = 21.8; 2 df; *P* <0.001; too few data from Northern Ireland). There were fewer midwife-led births in stand-alone units (*n* = 109, IQR = 59–202) than alongside (*n* = 663, IQR = 425–936) or integrated (*n* = 500, IQR = 250–621) units (H = 57.9; 2 df; *P*<0.001). Conversely, the percentage of all births under midwife-led care was much higher in stand-alone units (100%, IQR = 100–100) than alongside (15.4%, IQR = 11.4–21.7) and integrated units (16.0%, IQR = 9.8–23.0); (H = 100.6; 2 df; *P*<0.001).

The absolute numbers of transfers (whether in labour or antenatally) from midwife-led to consultant care mirrored the numbers of midwife deliveries (data not shown), but the percentage of transfers was independent of country, unit type, midwife-led or GP-attended care. The percentage of women transferred in labour was unrelated to 'distance from' and 'travel time to' the nearest consultant unit (Spearman's ρ = 0.086, 59 units, *P* = not significant; 0.051, 58, *P* = not significant, respectively); the percentage of antenatal transfers and of all bookings transferred was also not significantly associated. Midwife-led deliveries increased between 1999–2002 (Table 3).

Table 3. Median (IQR) number by unit type of GP and midwife deliveries in maternity units in England and Wales 1998–2002, compared to 1988.[3]

	All units	Integrated	Alongside	Stand alone
	(*n*[a]) Median (IQR) deliveries	(*n*[a]) Median (IQR) deliveries	(*n*[a]) Median (IQR) deliveries	(*n*[a]) Median (IQR) deliveries
GP-led deliveries				
Year				
1988[b]	(224) not known	(130) 52 (13–154)	(29) 387 (191–491)	(65) 125 (69–206)
1999	(25) 96 (19.5–308)	(9) 47 (14.5–308)	(3) 545 (231–568)	(7) 96 (14–160)
2000	(22) 120 (12.5–291)	(9) 20 (8–264)	(3) 373 (240–453)	(8) 120 (32–148)
2001	(28) 84 (6–140)	(10) 8.5 (6–155.5)	(4) 244 (54.5–390)	(9) 90 (39–139)
2002	(9) 4 (3–16.5)	(5) 14 (3–22)	(0)	(4) 3.5 (1.5–14.5)
Midwife-led deliveries				
Year				
1988[b]	n/a	n/a	n/a	n/a
1999	(70)149 (94–342)	(27) 297 (89–904)	(7) 258 (127–1568)	(34) 127.5 (81–221)
2000	(88) 173 (93–378)	(31) 283 (111–762)	(8) 227 (97–1263)	(37) 125 (77–199)
2001	(100) 210.5 (96–452)	(37) 321 (145–748)	(9) 265 (140–1082)	(41) 129 (73.5–206.5)
2002	(105) 238 (114.5–510)	(33) 522 (250–624)	(13) 605 (399–990)	(59) 131 (92–234)

[a]*Many units, especially integrated units, could not separate midwife from consultant booked deliveries.* [b]*Data taken from reference 3 when few midwife hospital bookings existed. n/a = not applicable.*

Home birth

The frequency of home births changed little between 2000–2002: median = 33 (IQR = 12.75–57.5), 26 (IQR = 9–51) and 26 (IQR = 9–50), respectively. More occurred in both England (median = 32, IQR = 13–60; median % = 1.92, IQR = 0.9–3.79%) and Wales (median = 30, IQR = 15–47; median % = 2.02, IQR = 1.17–5.20%) than in Scotland (median = 4, IQR = 1–9.5; median % = 0.47, IQR = 0.15–1.66%) or Northern Ireland (median = 4, IQR = 1–5; median % = 0.17, IQR = 0.01–0.32%) (*n*: Kruskal–Wallis H = 60.9; 3 df; *P*<0.001; %: H = 39.3; 3 df; *P*<0.001). There were more nearer stand-alone units (4.65%, IQR = 1.59–12.5%) than the other three unit types (1.80%, IQR = 0.95–2.78%; 1.00%, IQR = 0.24–2.20%; 0.98%, IQR = 0.42–1.72% respectively; H = 51.3; 3 df; *P*<0.001). The availability of midwife-led care increased the percentage of home births locally (2.20%, IQR = 1.01–4.21% versus 0.95%, IQR = 0.37–1.62%; H = 6.47, *P*<0.001).

DISCUSSION

Summary of main findings and comparison with existing literature

Home birth. It is government policy that women should have greater choice in maternity care,[1] with both the Welsh Assembly[7] and the English House of Commons[8] calling for more home births. It is asserted that such home births are no riskier to mother or baby than hospital births.[9–12] Despite such policy initiatives average home birth rates remain low but some maternity services are promoting and achieving much higher levels. Midwife-led care is associated with higher home birth rates, particularly in maternity service areas with stand-alone maternity units. One in 20 (5%) give birth at home near such stand-alone units, a figure consistent with that forecast in the conclusions of the National Birthday study.[12] Midwife-led care appears to double the rate of home births, and this has clearly been an important innovation over the past 10 years in UK maternity services. Such care also improves continuity and reduces obstetric interventions.[13–15] Hence, the uniform institution of midwife-led care in all UK maternity units, especially in Scotland and Northern Ireland, and the preservation of stand-alone units, rather than their closure, should achieve higher home birth rates.[16] This aim may also be assisted by the change of small consultant obstetric units in district general hospitals into midwife-led units, a trend that is being enhanced by the European Working Time Directive on junior doctor-hours.[17]

Choices. In England and Wales, most hospitals now offer midwife-led care, although numbers remain relatively modest at around 200 midwife-led deliveries per unit per year, which represents <10% of all deliveries. Women clearly have less choice in Scotland and Northern Ireland, both in terms of their lead professional and in terms of the physical place where they give birth. There are no stand-alone units in Northern Ireland, and midwife-led care and home births are less frequent in Scotland than in England and Wales. Another striking feature found in this study is the large reduction in GP intrapartum care over the past 13 years. At the time of the last national survey in England and Wales,[3] about 6% of births were under the nominal lead of a GP, and this option

existed in over half of the English and Welsh maternity units. Now, <0.1% of births occur under the nominal care of a GP, in fewer than 10% of units. Clearly, midwife-led care has replaced GP-led care and overtaken it as the alternative to consultant-led care. In practice, however, it is likely that most of GP-led care in 1988 was actually midwife-led care with GPs acting as a back-up in the minority of situations where labour problems arose. Even now, some stand-alone midwife units do call on the assistance of GPs when problems arise, but these remain few as midwives take on extended roles in intrapartum care.

Transfer rates. As more care is non-consultant led, there have been concerns about transfer problems both in terms of inconvenience to pregnant women and also in relation to safety, especially in the case of stand-alone units. When a low-risk pregnant woman is booked for midwife-led care, the midwife has to follow the unit's booking policy. If a potential problem arises, the woman must be transferred to consultant-led care. Most transfers occur antenatally and to a lesser extent in labour; few occur postnatally. It is the labour transfers that raise most concern, especially in terms of safety. Both the antenatal and labour transfer rates found in this study were reassuring and consistent with published trials[8,18–24] but higher than observational studies.[12,25] The median rates conceal wide variations that would merit further exploration from a pregnant women's perspective as well as by commissioners of maternity services. Such variation is not surprising in view of the wide variation in booking policies and criteria;[24,26] greater lay input into such policies may improve consistency across the UK by increasing non-professional scrutiny. In the case of stand-alone units, it was reassuring to find that transfer rates were comparable to the other 'on site' non-consultant units, and were independent of both the distance and the time taken to get to the nearest consultant unit.

Trends. Although the questionnaires did not aim to assess future plans, it was evident from many telephone conversations with maternity services managers that configuration in maternity services is still ongoing — despite the slight vacuum created by lack of a government response to the maternity services working party.[5] Indeed, although it appears that there has been an equal reduction in consultant and stand-alone units, this is not the case. It was clear during telephone conversations with many managers that over the past 13 years, two processes have been ongoing. There is a continued slow closure of stand-alone units, despite such units providing more woman-centred care,[14,28] and many consultant units with low delivery numbers have or are planning to convert into stand-alone midwife units. This has resulted in the contraction of consultant-led services to larger sites, and in increased travelling distances for both high- and low-risk women. The latter used to be able to access a local stand-alone unit, but many can no longer do so. The former used to be dealt with locally when the full range of consultant services were available. With the introduction of the full European Working Time Directive[17] over the next few years, it is likely that there will be further closure of small consultant units.

Strengths and limitations of the study

Although the data is no longer current, it is highly representative of the likely choices available to pregnant women in the UK as the total number of births reported in the study was over 600 000, very close to the average total number of births in the UK over the past few years. We did not seek information in this study on perinatal mortality rates or maternal or fetal morbidity, and so cannot comment on whether the increase in midwife-led care in particular has increased adverse outcomes, although anecdotal evidence suggests it has not. Also, many units (especially integrated) could not provide transfer data. Despite this lack of complete transfer data, we believe we have data from sufficient units, especially the stand-alone units, to draw valid conclusions.

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Association for Community-based Maternity Care
Ethics committee
At the time work was carried out, ethical approval was not required for this type of study on NHS staff
Competing interests
None
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